Professional Bodies In Computing

UK Bodies

The British Computer Society (abbreviated to BCS) is the professional body for those working in the whole area loosely known as IT, and is the one that accredits our courses. It has a number of local branches, which organise regular meetings: our local branch is the South Yorkshire one. It also runs a number of special interest groups (usually referred to as SIGs), for different specialities within computing. It publishes a magazine (called IT Now) that is circulated to all members, and (in conjunction with OUP) the Computer Journal.

Like most such bodies, it has various grades of membership, such as student and associate membership, full membership for those who meet basic requirements for education or experience, and fellowship for distinguished members. It also has a separate grade known as chartered membership, for those who have achieved full professional status. Associate members, members and fellows are entitled to use the appropriate letters after their names, viz AMBCS, MBCS, or FBCS, and chartered members may also use the letters CITP (for Chartered Information Technology Professional). Further information about the BCS can be found on the notice board in the Lewin laboratory, or on the web at the URL <http://www.bcs.org.uk/>.

The Institution of Engineering and Technology (abbreviated to IET) is the professional body for electrical and electronic engineering, and so it has a similar membership structure. It was formed in 2006 by merger of the Institution of Electrical Engineers (IEE) with the Institution of Incorporated Engineers (IIE). It accredits (sometimes jointly with the BCS) some computing courses that have a large hardware element, as well as courses in its own branch of engineering. It too runs various meetings, and publishes a variety of journals: of particular relevance is IET Software (which is published in conjunction with the BCS, and was previously known as the IEE Proceedings - Software, and before that the Software Engineering Journal). Its web address is <http://www.theiet.org/>.

The Engineering Council is the umbrella organisation for all the professional engineering bodies (i.e. including the BCS and the IET). It oversees the professional formation of engineers (as described below), particularly by setting general requirements for the accreditation of degree courses. It also certifies the professional competence of engineers, meaning that it awards the title of Chartered Engineer (abbreviated to CEng), and also the IEng and EngTech titles for those working at lower levels of responsibility, and it maintains a register of the people who have been awarded these titles. Its web address is <http://www.engl.org.uk/>.

A newer body is the Science Council, which certifies the professional competence of scientists, and awards the title of Chartered Scientist (abbreviated to CSci). Its web address is <http://www.sciencecouncil.org/>.

The Royal Academy of Engineering (formerly known as the Fellowship of Engineering) plays much the same role for engineering as the Royal Society does for science and the British Academy for the arts and social sciences. Thus, it provides some support for research work in engineering, and it awards the title FREng to very eminent engineers. Its web address is <http://www.raeng.org.uk/>.

Professional Formation

As professions are organised in the UK, computing professionals are often classed as engineers (although this is changing, now that the Science Council has been created), and so the process of becoming a professional is often referred to as engineering formation. In other countries computing professionals are not necessarily classed as engineers, but the process of professional formation is usually similar. In the UK this process is described formally as having four stages.

1. An accredited university degree course. At this stage you would be eligible for student membership of the relevant professional body (e.g., BCS).
2. A programme of Initial Professional Development, undertaken while gaining suitable industrial experience. This programme will be organised by the professional body in collaboration with your employers, and during this stage you would be eligible for some level of membership of that body (e.g., MBCS). Typically this stage lasts for at least four years, or possibly more, depending on the type of experience that you are gaining.
3. A professional review, conducted by members of the professional body, which if successful leads to certification. In future there may well be two such reviews: one for professional membership of that body (e.g., CITP), and a second (after more experience has been gained) for the title CEng or CSci.
4. Continuing Professional Development, as appropriate for the kind of work that you are undertaking.

International Bodies

Most countries have engineering bodies that play similar roles to those in the UK, and many of these bodies have some sort of international role as well. For computing there are two of them that ought to be mentioned here, because although they are based in the USA, they are much more international than most.
The Association for Computing Machinery (abbreviated to ACM) is not a professional engineering body, but is open to all who are either graduates, or who have at least four years relevant experience. It also offers a special category of membership for students. Its equivalents of local branches are called chapters: while they are fairly local to places in the USA, there is just one chapter for the whole of the UK. The ACM publishes a number of journals, notably Communications of the ACM (which is circulated to all members) and ACM Transactions on various topics, as well as other publications produced by many of its SIGs. It also publishes books through the ACM Press, and sets of conference proceedings through its digital library. Further information can be found on the notice board in the Lewin laboratory, or via the web at <http://www.acm.org/>.

The Institute of Electrical and Electronic Engineers (abbreviated to IEEE) is a professional engineering body, and so membership is only open to those who have graduated from degree courses that it has accredited (i.e. mainly just in the USA). It also has a subsidiary called the IEEE Computer Society, and membership of this is open on much the same basis as the ACM. IEEE publishes a range of journals, mainly the sets of IEEE Transactions, which are on various topics, including many in computing. IEEE-CS also publishes some journals of its own, such as Computer (which is circulated to all members), and it operates the Computer Society Press and its digital library, which again publish a range of books and conference proceedings: the latter are often produced in conjunction with the ACM. The web address for IEEE-CS is <http://www.computer.org/>.

International Umbrella Bodies

Fédération Européenne d’Associations Nationales d’Ingénieurs (abbreviated to FEANI) is the umbrella organisation for the bodies that are equivalent to the Engineering Council in most of the European countries (see the web site for details). The main role of FEANI is to coordinate the engineering professions throughout Europe, and in particular it awards the title European Engineer (abbreviated to Eur Ing) to those who are certified as professional engineers in their own country, and who meet its criteria for education, for professional experience, and for competence in at least one other European language besides their own. More recently it has run a programme called EUR-ACE, which includes the Engineering Council and is aimed at recognising accreditation of engineering degree courses across Europe. Its web address is <http://www.feani.org/>.

The World Federation of Engineering Organizations (abbreviated to WFEO) performs a similar role on a worldwide basis. In particular, it set up the Washington Accord, which is an agreement between the relevant bodies in a number of countries for the international recognition of the accreditation of engineering degree courses, and other related agreements. The federation includes FEANI, and the other countries are listed on the web site; eventually it may also include participants in EUR-ACE, but at the moment they are not linked. The web address for WFEO is <http://www.wfeno.org/>., and there is a separate site for the Washington Accord (and related agreements), at <http://www.washingtonaccord.org/>.

The Council of European Professional Informatics Societies (abbreviated to CEPIS) is the umbrella body in Europe for professional computing organisations like the BCS. Its main activity is to coordinate policies across these various organisations, although it is also involved in the organisation of some conferences. Its web address is <http://www.cepis.org/>.

An important historical activity of CEPIS was to develop the qualification known as the European Computer Driving Licence (or ICDL for countries outside Europe), which indicates that the holder has achieved a basic level of computer literacy. This, and the newer advanced version of it, are now run by a body called the ECDL Foundation, which licenses organisations in each country to administer it: within Europe the licensees are the various CEPIS members (i.e. the BCS in the UK). More details of the ECDL can be obtained from the BCS website, or from the foundation's website at <http://www.ecdl.com/>.

The International Federation for Information Processing (abbreviated to IFIP) has a similar role to CEPIS, but on a world-wide basis: in fact, CEPIS is affiliated to IFIP. Its web address is <http://www.ifip.or.at/>.

There have been suggestions that IFIP ought to develop an equivalent to the Washington Accord for computing courses. One step in this direction is that the Organisation for Economic Co-operation and Development (OECD) has produced the “Seoul Declaration for the Future of the Internet Economy”, but while this commits participants to increasing co-operation, it does not say anything explicitly about recognition of qualifications. In some countries (notably the USA) the issue of certifying engineers as competent is closely linked to the issue of whether they then need to be licensed to practice, and so is intensely political. Hence, progress in this direction is likely to be slow.